WHAT IS CLAIMED IS:

1.   An image processing method for recording a
plurality of sensed images on a recording medium, and
playing back and displaying the images, comprising: the
5   image sensing step of sensing an image; the
recording/playback step of recording and playing back
the image sensed in the image sensing step; and the
display step of playing back and displaying an image
sensed at least before a current image, wherein the
10   display step comprises a plurality of display layout
modes for displaying the current image sensing signal,
and a signal obtained by playing back the image sensed
at least before the current image with partial boundary
regions thereof overlapping each other.

15   2.   The method according to claim 1, wherein the image
is a still image and/or a moving image.

3.   The method according to claim 1, wherein the
plurality of display layout modes of the display step
include a first display layout mode in which the images
20   are laid out in two directions, and a second display
layout mode in which the images are laid out in one
direction.

4.   The method according to claim 3, wherein in the
second display layout mode, the images are laid out
25   horizontally and/or vertically.

5.   An image processing apparatus for recording a
plurality of sensed images on a recording medium, and
playing back and displaying the images, comprising:
image sensing means for sensing an image;

5   recording/playback means for recording and playing back
the image sensed by said image sensing means; and
display means for playing back and displaying an image

display means comprises a plurality of display layout

10   modes for displaying the current image sensing signal,
and a signal obtained by playing back the image sensed
at least before the current image with partial boundary
regions thereof overlapping each other.

6.   The apparatus according to claim 5, wherein the

15   image is a still image and/or a moving image.

7.   The apparatus according to claim 5, wherein the
plurality of display layout modes of said display means
include a first display layout mode in which the images
are laid out in two directions, and a second display

20   layout mode in which the images are laid out in one
direction.

8.   The apparatus according to claim 7, wherein in the
second display layout mode, the images are laid out
horizontally and/or vertically.

9. The method according to claim 1, further comprising a function of reversing the layout direction in the one direction.

10. The apparatus according to claim 5, further comprising a function of reversing the layout direction in the one direction.

11. The method according to claim 1, wherein the

~~display method comprises a display layout mode for laying~~

out and displaying the current image sensing signal, and a signal obtained by playing back the image sensed at least before the current image in two directions with partial boundary regions thereof overlapping each other, and includes the selection step of selecting an arbitrary one of display regions laid out in the display layout mode.

12. The apparatus according to claim 5, wherein said display means comprises a display layout mode for laying out and displaying the current image sensing signal, and a signal obtained by playing back the image sensed at least before the current image in two directions with partial boundary regions thereof overlapping each other, and includes selection means for selecting an arbitrary one of display regions laid out in the display layout mode.

13. A storage medium which stores a control program for controlling an image processing apparatus for

recording a plurality of sensed images on a recording

medium, and playing back and displaying the images, said

control program having control modules of the steps of:

sensing an image; recording and playing back the sensed

5   image; playing back and displaying an image sensed at

least before a current image; and controlling to execute

a plurality of display layout modes for displaying the

~~image sensing signal, and a signal obtained by~~

playing back the image sensed at least before the

10   current image with partial boundary regions thereof

overlapping each other.

14.   The medium according to claim 13, wherein the

image is a still image and/or a moving image.

15.   The medium according to claim 13, wherein said

15   program further has a control module of the step of

controlling to execute a function of reversing the

layout direction in the one direction.

16.   The medium according to claim 13, wherein said

control program further has a control module of the step

20   of controlling to select an arbitrary one of display

regions laid out in a display layout mode for laying out

and displaying the current image sensing signal, and a

signal obtained by playing back the image sensed at

least before the current image in two directions with

25   partial boundary regions thereof overlapping each other.

17.   An image processing apparatus having a function of storing a plurality of sensed still images and/or moving images in storage means, comprising:

image sensing means comprising an image sensing

5   lens which can change an optical system condition;

storage means for storing a plurality of images sensed by said image sensing means in association with each other;

optical system condition change instruction means

10   for outputting an instruction for changing the optical system condition of said image sensing lens; and

control means for controlling to generate an alert and/or inhibit the optical system condition of said image sensing lens from changing upon reception of the

15   instruction for changing the optical system condition of said image sensing lens from said optical system condition change instruction means after a first one of the plurality of images to be stored in said storage means in association with each other is sensed and

20   stored.

18.   The apparatus according to claim 17, wherein the optical system condition is a focal length of said image sensing lens.

19.   The apparatus according to claim 17, wherein

25   associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

20.   The apparatus according to claim 17, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the

5   plurality of images sensed by performing the pixel shift.

21.   An image processing apparatus having a function of storing a plurality of sensed still images and/or moving images in storage means, comprising:

image sensing means comprising an image sensing

10   lens which can change an optical system condition;

storage means for storing a plurality of images sensed by said image sensing means in association with each other;

optical system condition change instruction means

15   for outputting an instruction for changing the optical system condition of said image sensing lens; and

control means for controlling to start image sensing of a plurality of new images to be stored in association with each other upon reception of the

20   instruction for changing the optical system condition of said image sensing lens from said optical system condition change instruction means after a first one of the plurality of images to be stored in said storage means in association with each other is sensed and

25   stored.

22. The apparatus according to claim 21, wherein the optical system condition is a focal length of said image sensing lens.

23. The apparatus according to claim 21, wherein associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

24. The apparatus according to claim 21, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

25. The apparatus according to claim 17, wherein said control means controls to start image sensing of a plurality of new images to be stored in association with each other after the alert is generated.

26. An image processing apparatus having a function of storing a plurality of sensed still images and/or moving images in storage means, comprising:

image sensing means comprising an image sensing lens which can change an optical system condition;

storage means for storing a plurality of images sensed by said image sensing means in association with each other;

optical system condition change instruction means for outputting an instruction for changing the optical system condition of said image sensing lens; and

control means for controlling to set the optical

system condition of said image sensing lens at an

initial value before sensing of a first one of the

plurality of images to be stored in said storage means

5   in association with each other is started.

27.   The apparatus according to claim 26, wherein the

optical system condition is a focal length of said image

28.   The apparatus according to claim 27, wherein the

10   initial value is a focal length on a wide-angle end of

said image sensing lens.

29.   The apparatus according to claim 26, wherein

associating the plurality of images is obtaining a

panoramic image by synthesizing the plurality of images.

15   30.   The apparatus according to claim 26, wherein the

plurality of images are images sensed by performing

pixel shift, and associating the plurality of images is

obtaining a high-resolution image by synthesizing the

plurality of images sensed by performing the pixel shift.

20   31.   A control method for an image processing apparatus

which comprises image sensing means comprising an image

sensing lens which can change an optical system

condition, storage means for storing a plurality of

images sensed by said image sensing means in association

25   with each other, and optical system condition change

instruction means for outputting an instruction for

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changing the optical system condition of said image

sensing lens, comprising the step of:

generating an alert and/or inhibiting the optical

system condition of said image sensing lens from

5   changing upon reception of the instruction for changing

the optical system condition of said image sensing lens

from said optical system condition change instruction

stored in said storage means in association with each

10   other is sensed and stored.

32.   The method according to claim 31, wherein the

optical system condition is a focal length of said image

sensing lens.

33.   The method according to claim 31, wherein

15   associating the plurality of images is obtaining a

panoramic image by synthesizing the plurality of images.

34.   The method according to claim 31, wherein the

plurality of images are images sensed by performing

pixel shift, and associating the plurality of images is

20   obtaining a high-resolution image by synthesizing the

plurality of images sensed by performing the pixel shift.

35.   A control method for an image processing apparatus

which comprises image sensing means comprising an image

sensing lens which can change an optical system

25   condition, storage means for storing a plurality of

images sensed by said image sensing means in association

with each other, and optical system condition change instruction means for outputting an instruction for changing the optical system condition of said image sensing lens, comprising the step of:

5   starting image sensing of a plurality of new images to be stored in association with each other upon reception of the instruction for changing the optical

optical system condition change instruction means after
10   a first one of the plurality of images to be stored in said storage means in association with each other is sensed and stored.

36.   The method according to claim 35, wherein the optical system condition is a focal length of said image
15   sensing lens.

37.   The method according to claim 35, wherein associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

38.   The method according to claim 35, wherein the
20   plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

39.   The method according to claim 31, wherein image
25   sensing of a plurality of new images to be stored in

association with each other is started after the alert
is generated.

40. A control method for an image processing apparatus
which comprises image sensing means comprising an image

5 sensing lens which can change an optical system
condition, storage means for storing a plurality of
images sensed by said image sensing means in association

instruction means for outputting an instruction for

10 changing the optical system condition of said image
sensing lens, comprising the step of:

    setting the optical system condition of said image
sensing lens at an initial value before sensing of a
first one of the plurality of images to be stored in

15 said storage means in association with each other is
started.

41. The method according to claim 40, wherein the
optical system condition is a focal length of said image
sensing lens.

20 42. The method according to claim 41, wherein the
initial value is a focal length on a wide-angle end of
said image sensing lens.

43. The method according to claim 40, wherein
associating the plurality of images is obtaining a

25 panoramic image by synthesizing the plurality of images.

44.   The method according to claim 40, wherein the
plurality of images are images sensed by performing
pixel shift, and associating the plurality of images is
obtaining a high-resolution image by synthesizing the
5   plurality of images sensed by performing the pixel shift.
45.   A storage medium that stores a control program for
controlling an image processing apparatus which
comprises image sensi

sensing lens which can change an optical system
10   condition, storage means for storing a plurality of
images sensed by said image sensing means in association
with each other, and optical system condition change
instruction means for outputting an instruction for
changing the optical system condition of said image
15   sensing lens, said control program comprising a code of
the step of:

generating an alert and/or inhibiting the optical
system condition of said image sensing lens from
changing upon reception of the instruction for changing
20   the optical system condition of said image sensing lens
from said optical system condition change instruction
means after a first one of the plurality of images to be
stored in said storage means in association with each
other is sensed and stored.

46.   The medium according to claim 45, wherein the optical system condition is a focal length of said image sensing lens.

47.   The medium according to claim 45, wherein associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

48.   The medium according to claim 45, wherein the plurality of images pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

49.   A storage medium that stores a control program for controlling an image processing apparatus which comprises image sensing means comprising an image sensing lens which can change an optical system condition, storage means for storing a plurality of images sensed by said image sensing means in association with each other, and optical system condition change instruction means for outputting an instruction for changing the optical system condition of said image sensing lens, said control program comprising a code of the step of:

starting image sensing of a plurality of new images to be stored in association with each other upon reception of the instruction for changing the optical system condition of said image sensing lens from said

optical system condition change instruction means after
a first one of the plurality of images to be stored in
said storage means in association with each other is
sensed and stored.

5   50.   The medium according to claim 49, wherein the
optical system condition is a focal length of said image
sensing lens.

51.   The medium according

associating the plurality of images is obtaining a
10   panoramic image by synthesizing the plurality of images.

52.   The medium according to claim 49, wherein the
plurality of images are images sensed by performing
pixel shift, and associating the plurality of images is
obtaining a high-resolution image by synthesizing the
15   plurality of images sensed by performing the pixel shift.

53.   The medium according to claim 45, wherein said
control program further comprises a code of the step of
starting image sensing of a plurality of new images to
be stored in association with each other after the alert
20   is generated.

54.   A storage medium that stores a control program for
controlling an image processing apparatus which
comprises image sensing means comprising an image
sensing lens which can change an optical system
25   condition, storage means for storing a plurality of
images sensed by said image sensing means in association

with each other, and optical system condition change
instruction means for outputting an instruction for
changing the optical system condition of said image
sensing lens, said control program comprising a code of
5 the step of:

setting the optical system condition of said image
sensing lens at an initial value before sensing of a
first one of the plurality of images

said storage means in association with each other is
10 started.

55. The medium according to claim 54, wherein the
optical system condition is a focal length of said image
sensing lens.

56. The medium according to claim 55, wherein the
15 initial value is a focal length on a wide-angle end of
said image sensing lens.

57. The medium according to claim 54, wherein
associating the plurality of images is obtaining a
panoramic image by synthesizing the plurality of images.

20 58. The medium according to claim 54, wherein the
plurality of images are images sensed by performing
pixel shift, and associating the plurality of images is
obtaining a high-resolution image by synthesizing the
plurality of images sensed by performing the pixel shift.

25 59. The apparatus according to any one of claims 17,
21 and 26, wherein the change in optical system

condition includes free attachment/detachment of said

lens unit.

60. An image processing apparatus having a function of

storing a plurality of sensed still images and/or moving

5   images in storage means, comprising:

a detachable lens unit having nonvolatile storage

means;

formed by said lens unit;

10   instruction means for instructing

attachment/detachment of said lens unit; and

control means for controlling to permit detachment

of said lens unit after information pertaining to an

operation state of said lens unit and/or user

15   information are/is stored in said nonvolatile storage

means, when said instruction means outputs an

instruction for detaching said lens unit, and for

reading out information pertaining to a use state of

said lens unit and/or the user information stored in

20   said nonvolatile storage means and re-setting an

operation state of said image processing apparatus in

accordance with the readout information, when said lens

unit is attached again.

61. The apparatus according to claim 60, wherein the

25   operation state is an image sensing mode of said image

processing apparatus.

62. The apparatus according to claim 60, wherein the operation state is a focal length setting value of a lens unit, a focal length of which can be changed.

63. A control method for an image processing apparatus

5 which comprises a detachable lens unit having nonvolatile storage means, image sensing means for sensing an object image formed by said lens unit, and instruction means for i

of said lens unit, comprising the step of:

10 permitting detachment of said lens unit after information pertaining to an operation state of said lens unit and/or user information are/is stored in said nonvolatile storage means, when said instruction means outputs an instruction for detaching said lens unit, and

15 reading out information pertaining to a use state of said lens unit and/or the user information stored in said nonvolatile storage means and re-setting an operation state of said image processing apparatus in accordance with the readout information, when said lens

20 unit is attached again.

64. The method according to claim 63, wherein the operation state is an image sensing mode of said image processing apparatus.

65. The method according to claim 63, wherein the

25 operation state is a focal length setting value of a lens unit, a focal length of which can be changed.

66.   A storage medium that stores a control program for controlling an image processing apparatus which comprises a detachable lens unit having nonvolatile storage means, image sensing means for sensing an object

5   image formed by said lens unit, and instruction means for instructing attachment/detachment of said lens unit, said control program comprising a code of the step of:

permitting detachment of said lens unit, when

information pertaining to an operation state of said

10   lens unit and/or user information are/is stored in said nonvolatile storage means, when said instruction means outputs an instruction for detaching said lens unit, and reading out information pertaining to a use state of said lens unit and/or the user information stored in

15   said nonvolatile storage means and re-setting an operation state of said image processing apparatus in accordance with the readout information, when said lens unit is attached again.

67.   The medium according to claim 66, wherein the

20   operation state is an image sensing mode of said image processing apparatus.

68.   The medium according to claim 66, wherein the operation state is a focal length setting value of a lens unit, a focal length of which can be changed.

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